Russian Aeronautics 2013 vol.56 N2, pages 126-130

Study of isotropic shell survivability by the analytical method

Batnidze N., Sibgatullin E.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Shells with a through-thickness macrocrack are considered. The algorithms for determining the specific radius r c in the crack-tip vicinity, the limiting load p c (the attainment of which makes the crack unstable), and the direction of macrocrack growth θ c are presented. We study the carrying capacity of a lengthy circular cylindrical shell under the internal pressure and with an arbitrarily oriented macrocrack. © 2013 Allerton Press, Inc.

http://dx.doi.org/10.3103/S1068799813020037

Keywords

carrying capacity, force approach, linear fracture mechanics, through-thickness macrocrack